Disability in the San Francisco Bay Area

Comparing Data Between Census 2000 and
the American Community Survey 2000-2004

Working Paper

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1. Abstract

As a characteristic of the general population, disability rates determined by the U.S. Census should not vary much year to year or survey to survey. This paper examines disability data from Census 2000 and the American Community Survey (ACS), years 2000-2004, for the 5 San Francisco Bay Area primary metropolitan statistical areas (PMSA). For most of the PMSAs, statistically significant differences exist between Census 2000 and ACS disability data, particularly for the go-outside-home and employment disability items. Differences in sampling technique, sampling instruments, and information reporting between Census 2000 and ACS data that might account for this variation are discussed.

Census 2000 data shows 1.1 million disabled persons (any type of disability) residing in the nine-county Bay Area. This is 17.6 percent of the Bay Area's population (age 5+). This compares to the 2000 American Community Survey that shows 0.8 million disabled persons (13.1 percent) in the Bay Area.

2. Introduction

Census 2000 indicates that, in the 9-county San Francisco Bay Area, approximately 1.1 million people 5 years old and over had a disability, roughly 17.6 percent of that population group.[1] Also in 2000, the U.S. Census administered the Census 2000 Supplementary Survey (C2SS), a national sample utilizing the ACS design. The C2SS estimated 0.8 million people 5 years and over (13.1 percent) had a disability. [2]

Census 2000 and ACS questionnaires ask for information regarding six disability items: (1) sensory disability; (2) physical disability; (3) mental disability; (4) self-care disability; (5) go-outside-home disability; and (6) employment disability.

This paper compares survey results for these disability items for the five Bay Area primary metropolitan statistical areas (PMSA) across the following years:

1. Census 2000
2. 2000 Supplementary Survey (based on ACS methods)
3. 2001 Supplementary Survey (based on ACS methods)
4. 2002-2004 ACS (based on ACS methods)

Such comparisons will help identify the causes of systemic differences in disability data. Equally important, these comparisons may help ACS disability data users to better interpret these data in the transition between the decennial census and the ACS.

[1] The sampling universe for Census 2000 disability data includes civilian households and non-institutional group quarters. ACS data is tabulated only for civilian households, and does not sample non-institutional group quarters (e.g. group homes and college dormitories) – a negligible difference in most sampled areas, but potentially more important in areas with a large group quarters population.

[2] Totals for the C2SS 9-County San Jose-San Francisco-Oakland Bay Area were summed from the 5 constituent primary metropolitan statistical areas (PMSAs) – Oakland PMSA, San Francisco PMSA, San Jose PMSA, Santa Rosa PMSA, and Vallejo-Fairfield-Napa PMSA.

3. Background

The Census Bureau is replacing the decennial 1-in-6 "long form" questionnaire with the yearly American Community Survey (ACS). The ACS will provide estimates of household and person characteristics currently measured by the decennial census – such as household income, employment, disability, and other topics.

The ACS will eliminate the need for a long form in the 2010 census. Advantages of the yearly ACS over the decennial long form include more timely information, with annual updates of sampled data. Increased sampling options, flexibility in design and content, a better trained full-time enumerator staff (as opposed to temporary staff hired once every 10 years), and faster data release are also improvements. Disadvantages include a smaller sample set and potentially less-accurate results due to larger sampling error.

The ACS began full implementation in November 2004, sampling 250,000 addresses in the United States and Puerto Rico every month, totaling 3 million household samples per year. Expansion of the sampling methodology to include group quarters is currently delayed until 2006. Results for 2005 ACS household data should be available for areas greater than 65,000 population by summer 2006. For communities with a population of less than 65,000, it will take 3 to 5 years to accumulate enough samples to provide estimates similar to the quality of the census long form. Areas with a population 20,000 to 65,000 will use a 3-year average of data, while areas of less than 20,000 people will use a 5-year average. All areas will be updated every year thereafter.

The ACS has been in development since the mid 1990s, and began collecting its first samples in 1996 in four test sites. The first year for a nationally-representative sample using ACS methodology was 2000, called the Census 2000 Supplementary Survey. Subsequent national samples are called the Census Supplementary Survey 2001, the ACS 2002, ACS 2003, and ACS 2004. For ease of discussion, all samples using ACS methodology will be referred to as ACS samples in this paper.

4. Census Content Determination: Disability

This section provides background on the census content determination process for disability. It is organized into two time periods: content determination up to 1990 and then changes to the disability question set between the 1990 Census and Census 2000/ACS.

<u>Census Content Determination up to 1990</u>

In order to develop a set of disability questions for the 1990 Census, the Census Bureau conducted an extensive program to elicit comments on census content from diverse interest groups. Readers interested in more detail on the content determination process, the 1986 National Content Test, the 1988 Test Census, and the 1988 Dress Rehearsal Census, should refer to the Census Bureau Publication entitled "Content Determination Reports: Disability" (Report 1990 CDR-10). The following are excerpts from that Bureau of Census publication, explaining development of census disability questions from 1840 through 1990:

"Data on disability [were first] collected in the 1840 census. From 1840 through 1910, there were various census inquiries on mental or physical disabilities. There were no items on disability in recent censuses until 1970, when a question was included on the sample questionnaire that

asked whether a person had a condition affecting his or her ability to work, and how long this limitation had existed. In 1980, the disability series added an item asking about an individual's capacity to use public transportation. For the 1990 census, the transportation segment was dropped, but a second disability question was added to the questionnaire. This was a two-part inquiry on activity limitations that asked whether the person had difficulty going outside the home or taking care of his or her own personal needs in the home. The 1990 census, therefore, collected data on both work disability and activity limitations (Census of Population and Housing, 1990, p.3)."

"In developing the content of the 1990 questionnaires, important steps were to review the uses of existing census data and to identify requirements for census information, tasks that had to be balanced against the complex considerations of conceptual and statistical reliability, suitability, cost, questionnaire space, respondent burden, and so forth. Determining how census data were used to meet the needs of Federal programs, particularly those having a legislative foundation, was especially critical. There were many demands for additional questions of the 1990 census, far more than could be accommodated on the questionnaires."

"The Census Bureau was guided in the selection of questions for the 1990 census by five basic criteria:

- First, only essential data were considered – those with a broad demonstrated need and those needed to meet Federal, State, and local statutory data requirements and to administer governmental programs. These data would have to be needed for relatively small areas (local governments and small statistical areas) or numerically small population groups. If data were required only at the national or regional level, sample surveys were the more appropriate vehicles.
- Second, many of the questions asked in 1980 were repeated in 1990 because they provided a continuum of vital socioeconomic and housing trend data.
- Third, there would be no significant increase in the number of questions the Census Bureau would ask in 1990, relative to the 1980 census. Public cooperation – essential for a successful census – could be undermined by a questionnaire that respondents found too burdensome.
- Fourth, questions would not be used that were intrusive, offensive, or widely controversial. Controversial subjects could influence or reduce response to the census and were to be avoided.
- Fifth, the Census Bureau had to be able to formulate a clear, concise question on each subject that would yield accurate data. Wording and format were especially important because the census is conducted primarily by mail, using a self-administered questionnaire (Census of Population and Housing, 1990, pp. 3-4)."

"To elicit information about data needs, the Census Bureau conducted an extensive consultation program with a broad array of data users in Federal, State, local, and American Indian tribal governments; the business sector; academia; professional groups; community organizations; and members of the general public. In addition, the Census Bureau established a number of formal mechanisms to ensure that various segments of the data-user community would be consulted in the content development process. The Census Bureau sponsored conferences and organized advisory committees with representatives of public and private organizations and of racial and ethnic groups to solicit advice about their special data needs."

"To learn directly about the data needs of Federal agencies, the Census Bureau formed 10 Interagency Working Groups (IWGs), chaired by Census Bureau staff members and organized along questionnaire content lines. The purpose of the IWGs was to discuss the 1990 census Federal data requirements and the geographic levels for which the data were needed."

"The IWG on Health and Disability included a wide range of interests, and the group was organized into four sub-groups to cover these areas: disability limitations and conditions; health status and health care; special populations (the aged, children, and veterans); and housing and environmental hazards (Census Bureau, 1990, pp. 4-5)."

Work done by the IWGs culminated in two questions on the 1990 Census "long form" related to worker disability, mobility limitation, and self-care limitation for persons 15 years and over:

> **Question 18: "Does this person have a physical, mental, or other health condition that lasted for 6 or more months and which – a) limits the kind or amount of work this person can do at a job? b) prevents this person from working at a job?"**
>
> **Question 19: "Because of a health condition that has lasted for 6 or more months, does this person have any difficulty – a) going outside the home alone, for example, to shop or visit a doctor's office? b) taking care of his or her own personal needs, such as bathing, dressing, or getting around inside the home?"**

The scope of these disability questions was expanded between 1990 and 2000.

Census 2000 and ACS Disability Questions

Disability questions were again revised from those used in 1990, for both Census 2000 and ACS questionnaires. The disability questions asked on Census 2000 and the ACS were selected by an interagency working group convened by the Office of Management and Budget. Prior to the Census 2000 no previous census year had agreement about the best short set of questions to characterize and quantify the disabled community (Adler, 1999).

The working group responsible for developing the new questions consisted of staff from the Social Security Administration (SSA), the Department of Health and Human Services, the U.S. Census Bureau, and other agencies. The group reviewed the Census Bureau's proposed disability questions, suggested an alternative set, and then subjected both to the Census Bureau's cognitive questionnaire lab (Adler, 1999).

The questions resulting from this collaborative effort, identical in both Census 2000 and the ACS, ask for information about the following disability conditions:

1. Long-lasting vision or hearing impairment
2. A long-lasting physical disability
3. Difficulty learning, remembering, or concentrating
4. A self-care disability
5. A disability affecting one's ability to go outside the home alone
6. A disability affecting one's ability to work

These questions represent an improvement over those asked in the 1990 Census, in that they differentiate between different types of disability (sensory, mental, physical) and include information about children with disabilities (not just workers).

For Census 2000 and the ACS, people meeting one or more of the following criteria were defined as having a disability:

- 5 years old or over and responded "yes" to having a vision/hearing, physical, mental, or self-care disability
- 16 years old or over and responded "yes" to having a disability affecting one's ability to go outside the home
- 16 to 64 years old and responded "yes" to having a disability that affected one's ability to work

Census and ACS question content is strongly influenced by government agency programmatic needs. Disability is a required subject for the census, based on laws pertaining to certain programs in the Department of Education. The interagency working group developing these questions selected the age ranges (5 and above, 16 and above, and 16 to 64 for respective disability measures) because of federal legislation requiring the Census Bureau to collect and tabulate such data. At the time this question set was developed, no such information mandate existed for collecting disability data for children under the age of 5. Additionally, there was some consensus that many of these disability questions didn't apply to infants and small children, or that such disability information could not be easily discovered at such a young age (Stern, 2004a).

Section 7 below provides an in-depth discussion about the survey instrument used for Census 2000 and the 2000-2004 ACS, and how survey design impacts analysis and results. Additionally, readers interested in more detail about the content determination process for the Census 2000/ACS surveys should refer to the 1999 Social Security Bulletin entitled "Collecting Information on Disability in the 2000 Census: An Example of Interagency Cooperation" (Adler, 1999).

5. Other Disability Data Sources

The focus of this paper is comparing Census 2000 with ACS disability data sets. It is important to note, however, that other disability data sets exist at a national and regional level. In addition to Census and ACS data sets, national disability surveys include:

1. The American Housing Survey (AHS). The AHS collects data on the nation's housing, housing characteristics and cost, income, neighborhood quality, and other housing-related characteristics. National data are collected in odd numbered years, and data for each of 47 selected metropolitan areas are collected every six years. The AHS samples the same housing units in each survey, making the survey very useful for analyzing the flow of households through housing. Disability data available from the AHS includes information about disability-related and workers-compensation payments received.

2. The Current Population Survey (CPS). The CPS is a monthly survey of about 50,000 households conducted by the Census Bureau for the Bureau of Labor Statistics, and is the primary source of information on labor force characteristics of the U.S. population. Published data sets focus on the civilian noninstitutional population ages 16 and over, providing estimates on employment, unemployment, work hours and other labor force indicators. Supplemental questions produce estimates on such topics as school enrollment, income, previous work experience, health, employee benefits, and work schedules. CPS data is available at various geographic summary levels, including county and PMSA, and includes the following disability variables:

    - Family and Household (disability benefits);
    - Labor Force (employment disability);
    - Person (disability income, employment disability, disability-related retirement);
    - School Enrollment Supplement (disability type and disability-related services received);
    - and Veteran's Supplement (service-connected disability, employment related disability, and veteran's payments).

3. National Health and Nutrition Examination Survey (NHANES). The NHANES is administered by one of the survey divisions at the Center for Disease Control's (CDC) National Center for Health Statistics (NCHS). For more than 35 years, the NHANES has conducted detailed interviews and physical exams for some people in each sampled household, with the goal of collecting data to solve health problems, develop health programs, and to improve the quality of health care. Exams are conducted in mobile centers located in the communities selected for the survey, and include questions about dental health, hearing and vision, and nutrition. Body measurements are taken, such as height and weight, and certain diseases and health conditions are investigated. Disability variables collected by the NHANES include: difficulties with walking, dressing, eating, and other tasks; whether disability income was received; and if the respondent retired because of a disability. Data is summarized at a national level and for selected states.

4. Survey of Income and Program Participation (SIPP). The SIPP collects source and amount of income data, labor force information, program participation and eligibility data, and general demographic characteristics for members of households 15 years old and over.

SIPP survey design is a continuous series of national panels, with a sample size ranging from 14,000 to 36,700 interviewed households. The SIPP sample is a multistage-stratified sample of the U.S. civilian noninstitutionalized population, and each panel's duration ranges from 2½ to 4 years. Topical modules add questions on a variety of topics not covered in the core section of the survey, including personal history, child care, wealth program eligibility, child support, disability, school enrollment, taxes, and annual income. Disability variables collected by the SIPP are tabulated at the national level and include: adult and child learning and development disabilities; disability-related social security benefits and the householder's age when the benefits were initiated; veteran's disability rating and service-connected disability benefits; childbirth-related disability leave; reason for and amount of employee disability payments; developmental disability and mental retardation; age-related disability including dementia, senility, and Alzheimer's; and disability-related welfare benefits being cut due to requirements not being met. The SIPP is designed to produce national-level estimates for the U.S. resident population and subgroups.

5. Survey of Program Dynamics (SPD). The SPD is a nationally-representative longitudinal, demographic survey designed to collect data on economic, household, and social characteristics over time. The SPD is primarily interested in capturing information about government program participation over a ten-year period, including long-term changes for individuals that result from reforms in the welfare system. The SPD consists of three components: information collected from the 1992 and 1993 panels of the SIPP; information collected in 1997 using a modified version of the March CPS instrument; and information collected from 1998 to 2002 using the SPD instrument. Disability variables sampled with the SPD are available only at the national level and include disability-related income and payments made to individuals.

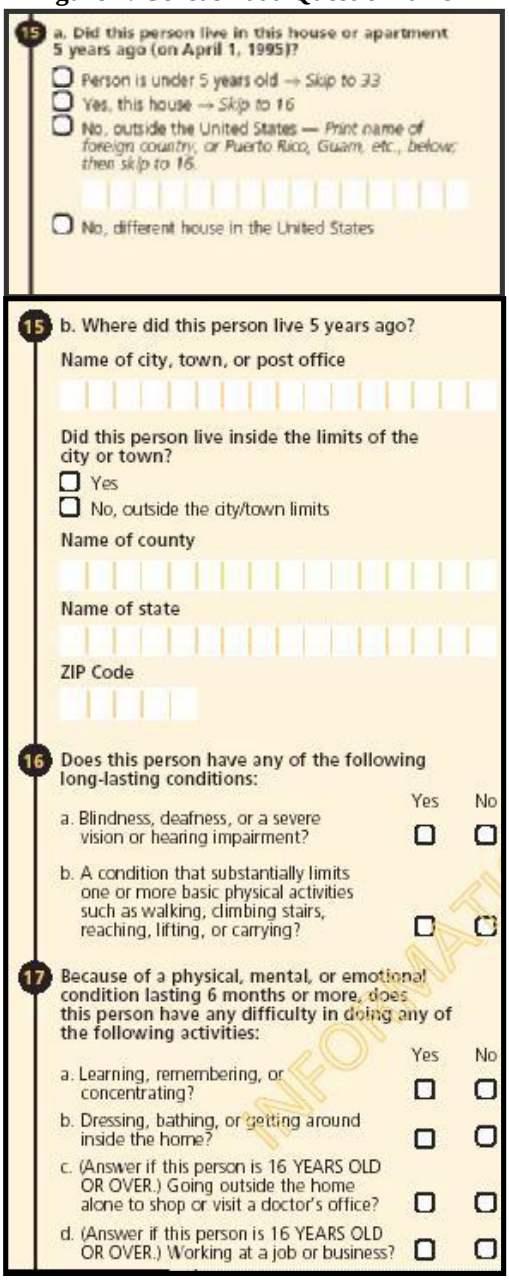
6. Differences between SF3 and ACS Data

ACS results for disability are generally comparable with those from the decennial long form – known as Summary File 3 (SF3) – with some caveats. Firstly, the sampling rate for the samples based on ACS methodology is much less than that for SF3. This is especially true for pilot-year sampling in the years 1996-2004. For example, only 15,300 households were interviewed in the Bay Area for the ACS 2000, compared to roughly 308,000 Bay Area households surveyed for the Census 2000 long form. Sampling rates have improved upon full ACS implementation, but will never approximate those of the decennial census.

ACS data is currently only reported for PMSAs and counties or places with a population of greater than 250,000 residents. In the Bay Area, this threshold excludes tabulated results for many small cities, and Napa and Marin counties. As stated above, this reporting threshold will change with data reporting for the 2005 ACS.

ACS samples are currently only collected for households. In an effort to ease their sampling burden and to minimize confusion with the census long form, institutional and non-institutional group quarters were excluded from the ACS sample. For most areas, household-only sampling does not pose a substantial comparability problem between ACS and SF3 data, as the group quarters population represents a small proportion of the total population. In areas where the group quarters population represents a larger percentage of the total population, the Census Bureau cautions data users about comparability of these sample sets.

Figure 1. Census 2000 Questionnaire



7. Disability Survey Methodology for Census 2000 and ACS

Operations for both the Census 2000 and ACS rely on two methods for collecting information from respondents: mail return of the paper questionnaire and non-response follow-up (NRFU). Completed census and ACS forms returned by mail typically require no follow-up. During NRFU, Census Bureau interviewers contact households that did not return their questionnaire. Both the paper survey instrument and the NRFU methods differed between Census 2000 and ACS methodologies.

<u>Questionnaire Items on Disability (Census 2000 and ACS 2000-2002)</u>

While the disability questions for the Census 2000 and ACS 2000-2002 questionnaires shared identical wording and very similar layouts, they differed in terms of their lead-in questions, question numbers, background color, and paper size. Illustrations of the disability questions for

Person 1 in the household from the Census 2000 and ACS 2000-2002 are depicted in Figures 1 and 2, respectively.

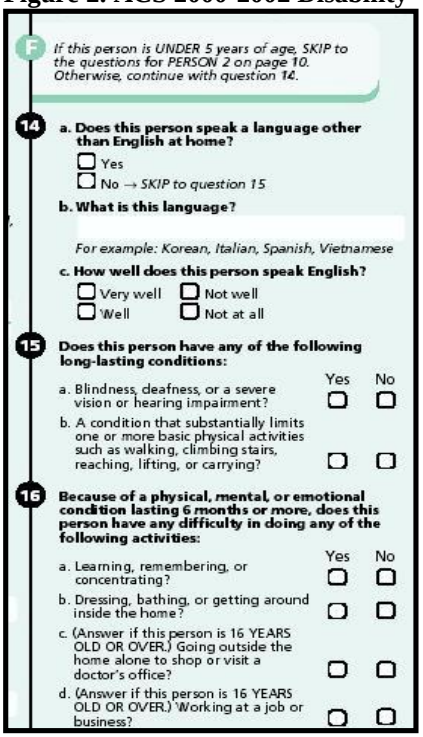
The dark line in Figure 1 separating questions 15 and 16 represents a page break in the questionnaire. Both the Census 2000 and ACS 2000-2002 questionnaires instruct respondents to skip subsequent disability questions if the person is under 5. However, instructions for the Census 2000 are contained within the context of a question (15a), while the ACS 2000-2002 has set-aside instructions directing respondents to proceed to Person 2 if Person 1 is under 5. These additional instructions help minimize respondent confusion.

NRFU Procedures

The NRFU procedure differed substantially between Census 2000 and the ACS surveys. Census 2000 follow-up consisted of an in-person, temporary enumerator interviewing respondents with a paper questionnaire. (See Figure 3). The ACS NRFU involved permanent field enumerators with an automated computer instrument interviewing non-respondents in one of two ways: computer-assisted telephone interviews (CATI) or computer-assisted personal interviews (CAPI) (Stern, 2003).

The Census 2000 enumerator form layout was substantially different from that of the mailback questionnaire. In addition to other formatting differences, the location of the "Yes" and "No" check boxes were set below the questions, not to the right of them as they are in the questionnaire. Also, all of the disability questions on the enumerator form are bolded and not indented, while the mailback questionnaire has only the lead-in text bolded with indentations for the question subparts (Stern, 2003).

Figure 2. ACS 2000-2002 Disability



F *If this person is UNDER 5 years of age, SKIP to the questions for PERSON 2 on page 10. Otherwise, continue with question 14.*

14 **a. Does this person speak a language other than English at home?**
☐ Yes
☐ No → *SKIP to question 15*

b. What is this language?

For example: Korean, Italian, Spanish, Vietnamese

c. How well does this person speak English?
☐ Very well ☐ Not well
☐ Well ☐ Not at all

15 **Does this person have any of the following long-lasting conditions:**

	Yes	No
a. Blindness, deafness, or a severe vision or hearing impairment?	☐	☐
b. A condition that substantially limits one or more basic physical activities such as walking, climbing stairs, reaching, lifting, or carrying?	☐	☐

16 **Because of a physical, mental, or emotional condition lasting 6 months or more, does this person have any difficulty in doing any of the following activities:**

	Yes	No
a. Learning, remembering, or concentrating?	☐	☐
b. Dressing, bathing, or getting around inside the home?	☐	☐
c. (Answer if this person is 16 YEARS OLD OR OVER.) Going outside the home alone to shop or visit a doctor's office?	☐	☐
d. (Answer if this person is 16 YEARS OLD OR OVER.) Working at a job or business?	☐	☐

The principal improvement of the ACS NRFU procedures (CATI and CAPI) over the Census 2000 enumerator/paper questionnaire method is that the skip sequencing is automated by the computer with the ACS method. Census interviewers need not be aware of a respondent's previous information before moving on; if the question isn't applicable, the computer will omit it. This leads to a reduction in "false-positive"[3] errors associated with completing questions that may not be applicable (Stern, 2003; Stern, 2004b).

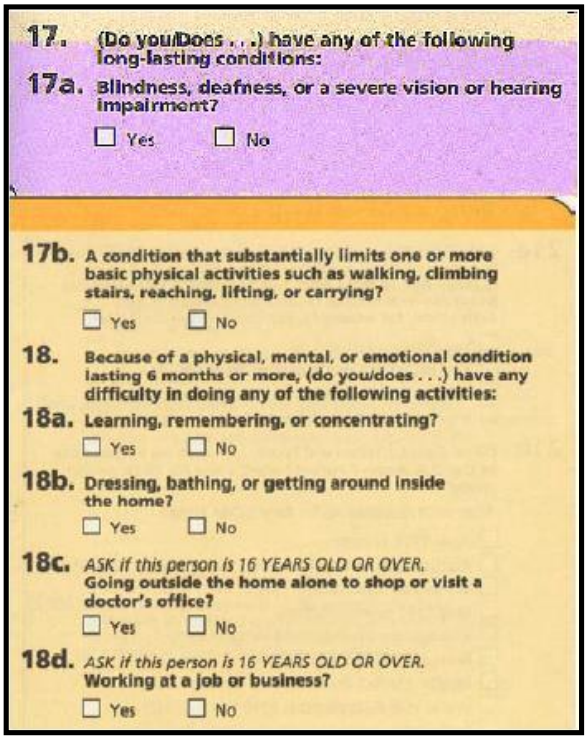
Research by the Poverty and Health Statistics Branch of the Census Bureau on disability suggests that the variation in the skip instructions between different surveys, and between a survey instrument and its NRFU method, may account for the differences between sample estimates. The

[3] A "false-positive" error, also known as a Type I error, is when an affirmative (or positive) response to a question is given for a subject (individual, household, etc.) that does not possess the relevant attribute. Such an error is a false positive whether the mistaken positive response was intentional or accidental. For example, if someone indicates they have a go-outside-home disability when they do not, it is a false-positive error. With improvement of ACS NRFU procedures, it is less likely that a positive response will be given for questions that should have been skipped, thus reducing the number of false-positive errors associated with the disability questions. It is noteworthy that sample weighting may magnify the impact of false-positive errors on overall sample representativeness.

report goes on to explain, "Specific types of errors may be related to the wording, layout, or other presentation aspects of the questions." Among many potential factors responsible for sample estimate variability, the report identified three:

- "Respondents may forget the context of the questions by the time they get to b,c, and d;
- The long lead-ins include several elements which respondents may not understand. For instance, 'a physical, mental, or emotional condition', 'lasting 6 months or more', 'any difficulty in any of the following activities';
- On parts c and d of the second question in the mail return, respondents may have thought they were being asked if they were 16 years old or over" (Stern, 2003).

Figure 3. Disability Items from the Census 2000 Long Form Enumerator Questionnaire – Person 1

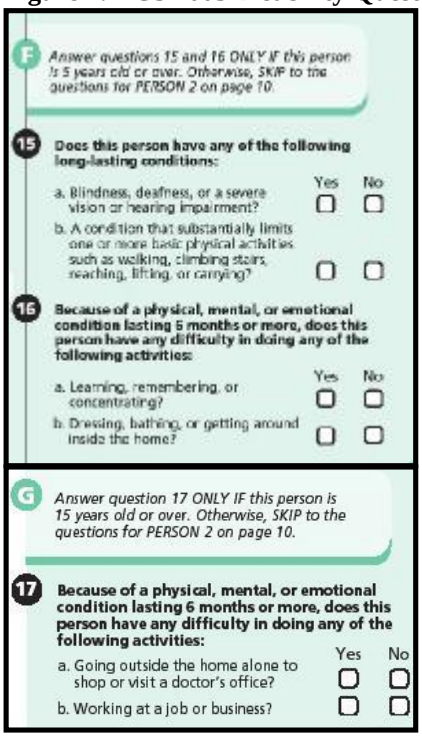


Survey Changes in 2003

Another later change to the section dealing with disability was made in the 2003 ACS mailback questionnaire (Figure 4). Most significantly, after the page turn following item 16, new instructions are given regarding skipping go-outside and employment disability items if Person 1 is too young. The new layout is intended to reduce confusion for respondents and increase the accuracy of responses.

This new layout was also used in the 2004 and 2005 ACS surveys.

Figure 4. ACS 2003 Disability Questions



8. Bay Area Population Characteristics: Disability Data

This section compares disability data from Census 2000 and ACS 2000-2004, for the 5 PMSAs comprising the San Francisco Bay Area. Disability rates are depicted in Figures 6-11 and listed in Tables 1-6. The PMSAs and counties they consist of are:

1. Oakland PMSA
    a. Alameda County
    b. Contra Costa County
2. San Francisco PMSA
    a. San Francisco County
    b. Marin County
    c. San Mateo County
3. San Jose PMSA
    a. Santa Clara County
4. Santa Rosa PMSA
    a. Sonoma County
5. Vallejo-Fairfield-Napa PMSA
    a. Napa County
    b. Solano County

Sampling Error

The error bars on each column chart depict an estimate's 90% confidence interval. Both Census 2000 SF3 and ACS data are sample estimates, and are therefore subject to sampling error. Errors in accuracy associated with sampling arise from two sources. The first, non-sampling error (such as editing, reviewing or keying data), was discussed above in Section 7, Disability Survey Methodology. The second source of error, that due to the use of probability sampling, relies on statistical sampling and analysis procedures to insure the integrity and representativeness of survey results.

Sample results utilize the concept of standard error to measure the deviation of a sample estimate from the average of all possible estimates. The sample estimate and its estimated standard error are used to construct prescribed 90-percent confidence intervals that include the average result of all possible samples. The error bars in Figures 6-11 depict the range of this type of error. Unfortunately, non-sampling errors cannot be quantified using similar means.

The standard error is larger, and confidence intervals wider (as a percentage of the estimate), for geographic areas with smaller populations and for characteristics that occur less frequently in the area of interest. This is especially evident for disability items in the Santa Rosa and Vallejo-Fairfield-Napa PMSAs, with smaller populations than the other PMSAs discussed in this paper. It is also noteworthy that the confidence intervals for the Census 2000 estimates are much tighter than those for the ACS, due to a much larger Census 2000 sample size (Starsinic, 2004).

Disability Rates

The white arrows indicate statistically significant differences between years, and provide a guide to interpreting differences between estimates. Essentially, statistical significance gives some

indication as to whether differences in the data are substantially greater than those created by sampling error.

Other research literature comparing Census 2000 with ACS estimates emphasizes that, while statistical significance is important, it is equally important to look at the magnitude of difference between estimates. Specifically, it is important to determine whether or not the magnitude of difference between estimates would lead one to different conclusions with regard to policy interpretation. The combination of the actual difference and statistical significance is important in examining data differences between Census 2000 and ACS 2000, and between ACS 2000 and subsequent ACS years (Raglin, 2004).

Figures 6 through 11 show that, while many of the Census 2000/ACS 2000 difference in estimates for the first four disability items are small, and often not statistically significant, most for the go-outside-home and employment disability items are both statistically significant and large in magnitude. In the total San Francisco Bay Area (Figure 11), and in every individual PMSA except Santa Rosa (Figure 9), disability numbers for the Census 2000 go-outside-home disability item far outstrip those for the ACS 2000. And, in the Santa Rosa PMSA, the difference between the Census 2000 and ACS 2000 go-outside-home disability item is high in magnitude. Given the small population and larger standard error, however, statistical significance does not exist between estimates. In numerical terms, Bay Area Census 2000 and ACS 2000 populations with a go-outside disability are 451,000 and 286,000, respectively.

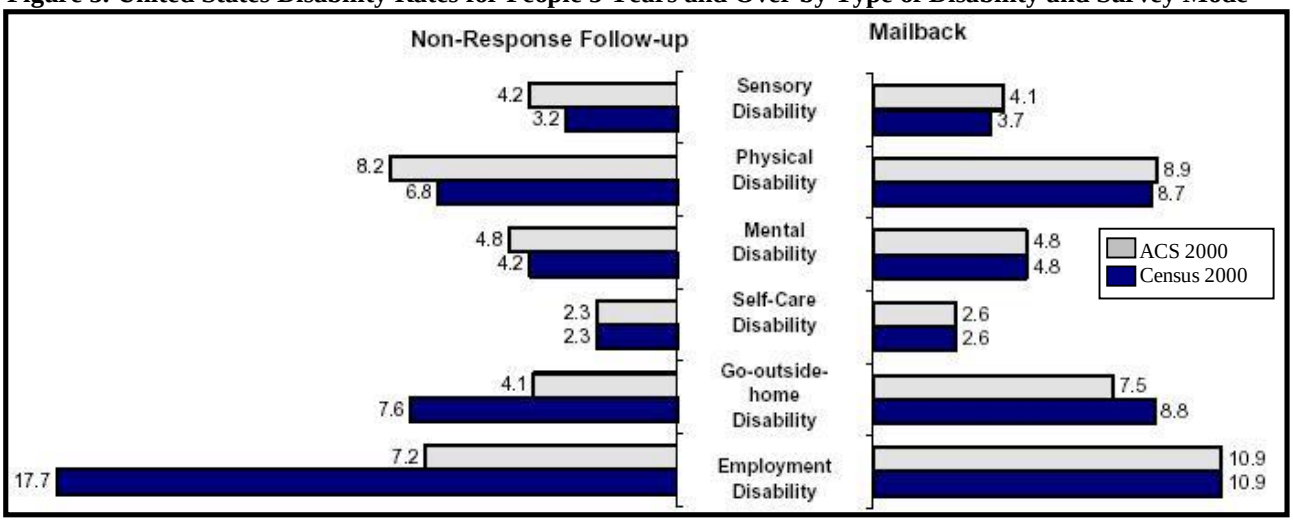
Differences between Census 2000 and ACS 2000 employment disability item are both large in magnitude and statistically significant for the total San Francisco Bay Area, and for each PMSA. Bay Area persons with an employment disability for Census 2000 and ACS 2000 are 522,000 and 270,000, respectively.

Significant differences in the last two disability items appear again between the ACS 2002 and ACS 2003. Several explanations may account for this. It may be that improvements to the ACS survey instrument helped to clarify questions for respondents, and to lower errors associated with self-reporting of these disability items. On the 2003 ACS instrument Items 17a and 17b comprise a separate question on a new page (Figure 3). It is possible that the new lead-in question and skip instructions may help mitigate suspected respondent confusion (Stern, 2003).

A limitation of this paper's analysis is that interview totals for Bay Area disability items are not available by mode (i.e. mailback questionnaire versus NRFU). There may be a bias in the data based on how it is collected, and it would be helpful to study that level of sample collection detail. Fortunately, there is some research about disability item mode bias performed at the national level, which may be helpful in making inferences about Bay Area disability. The Census Bureau's Poverty and Health Statistics Branch, who have access to the privacy-restricted raw data for research, recently performed a disability study at the national level that separated national Census 2000 and ACS 2000 disability data into mailback-interview and NRFU-interview returns. Results of this analysis have found a bias by mode at the national level (Stern, 2003).

NRFU-mode estimates for Census 2000 and 2000 ACS sensory and physical disability items are not as close to one another as are the estimates from the mailback questionnaire (Figure 5). For both disability items, the Census 2000 NRFU-mode estimates are lower. Two untested potential reasons for this are cited:

Figure 5. United States Disability Rates for People 5 Years and Over by Type of Disability and Survey Mode



Source: Poverty and Health Statistics Branch, U.S. Census Bureau. 2004

- "different rates of item imputation and the different characteristics of those with item non-response, and/or
- [ACS] adjusts for non-interview using weighting, but Census 2000 does not" (Stern, 2003).

At the same national level of analysis, the last two disability items (go-outside-home and employment disability) demonstrated the most significant differences, both across surveys and between modes. For the go-outside-home disability item, the ACS 2000 found that 7.5 percent of the mailback respondents but only 4.1 percent of the people in the NRFU group had this disability. With the employment disability item, the ACS 2000 found that 10.9 percent of the mailback population versus only 7.2 percent of NRFU universe claimed this disability. The Census 2000 found the difference between mailback and NRFU rates much greater, 10.9 and 17.7, respectively (Stern, 2003).

The substantial differences by mode demonstrated with the last two disability items may be due to some mail respondent's confusion about what questions were being asked. Given the wording of the questions, and that the ACS NRFU had lower disability rates for both items, Census Bureau researchers suggest that it is possible that mail respondents for both the Census 2000 and ACS 2000 "may have been telling us that 'yes, they are 16 years old and over.'" Researchers also suggest that, because Census 2000 NRFU reported a higher likelihood for the employment disability item, that respondents may have been saying that "yes, they are employed" (Stern, 2003).

9. Allocation (Imputation) Rates

When NRFU methods fail to collect the necessary sample information, the Census Bureau utilizes a technique known as allocation (also known as imputation) to fill in missing values. Essentially, during allocation, records with similar geography and demographic information are used to establish data "donors" and "hosts." Donor data (which are complete) are transferred to hosts (incomplete records) to fill in missing data values. Then, complete sample data are expanded from the sample to the general population with a weighting factor. While allocation is an essential tool to establish complete data sets, it contributes to errors in the data. When there are many

missing data items, requiring high allocation rates to complete person and household records, errors attributed to allocation increase. Generally, lower allocation rates in a given sample suggest better data quality.

Tables 7-12 list allocation rates for each disability item by PMSA and survey year. With the exception of the Vallejo-Fairfield-Napa PMSA, the allocation rates for disability items are much lower for ACS 2000 than they are for Census 2000. Allocation rates in subsequent years of the ACS are all substantially below those of Census 2000.

10. Conclusion

Historically, disability has been a very difficult concept to describe and quantify. Disability rates, when characterized and quantified in a consistent way, should not show much variation between years or across different survey instruments. However, the research discussed here suggests that even subtle differences in methodology between surveys can produce divergent results – both between surveys and within surveys between modes (self-reported vs. enumerator follow-up).

The findings of this paper and other disability research suggest that the Census 2000 may have significantly overstated the extent of go-outside-home and employment disabilities. However, much more research is needed to investigate how changes in questionnaire design, survey administration, and enumerator training impact disability data quality.

Improvements to the 2003 disability question set, a better-designed non-response follow-up methodology, and more highly-skilled enumerator staff will likely aid the ACS in future years of disability data collection to overcome many of the inconsistencies and respondent misunderstandings associated with the Census 2000 disability questions.

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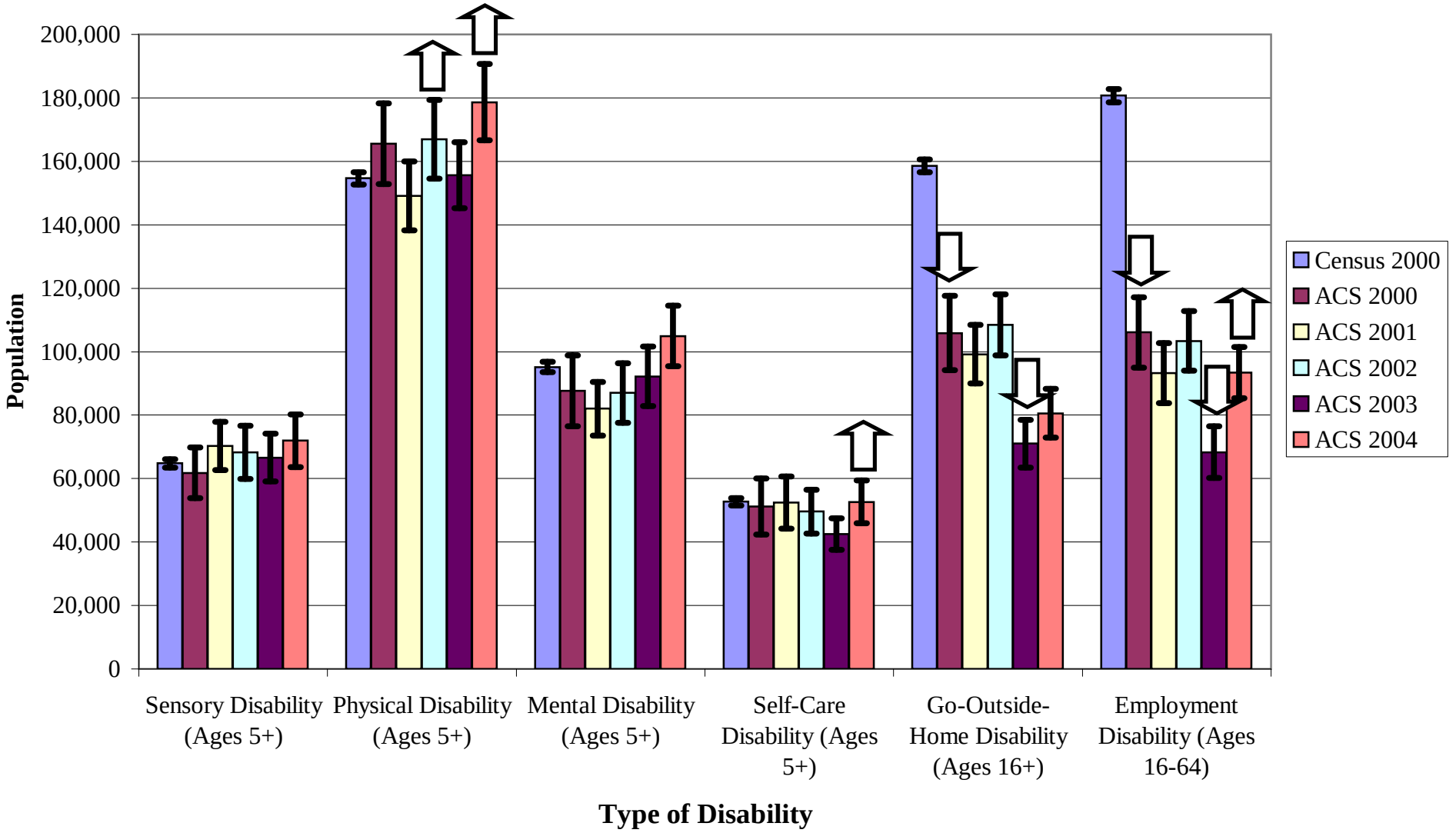
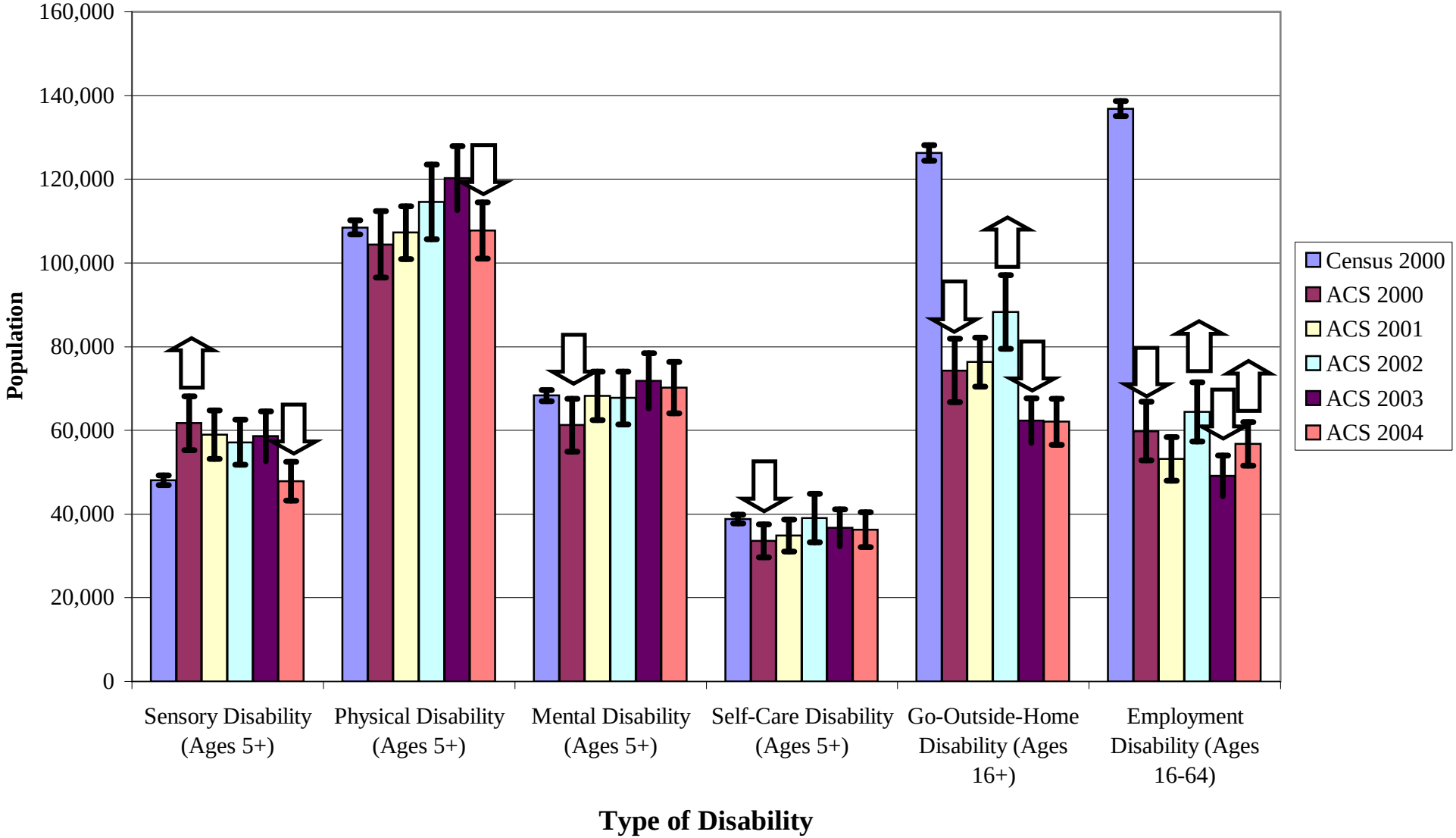
Figure 6
Persons with Disabilities by Type of Disability, 2000-2004
Oakland, California PMSA
Census 2000 and American Community Survey (2000-2004)



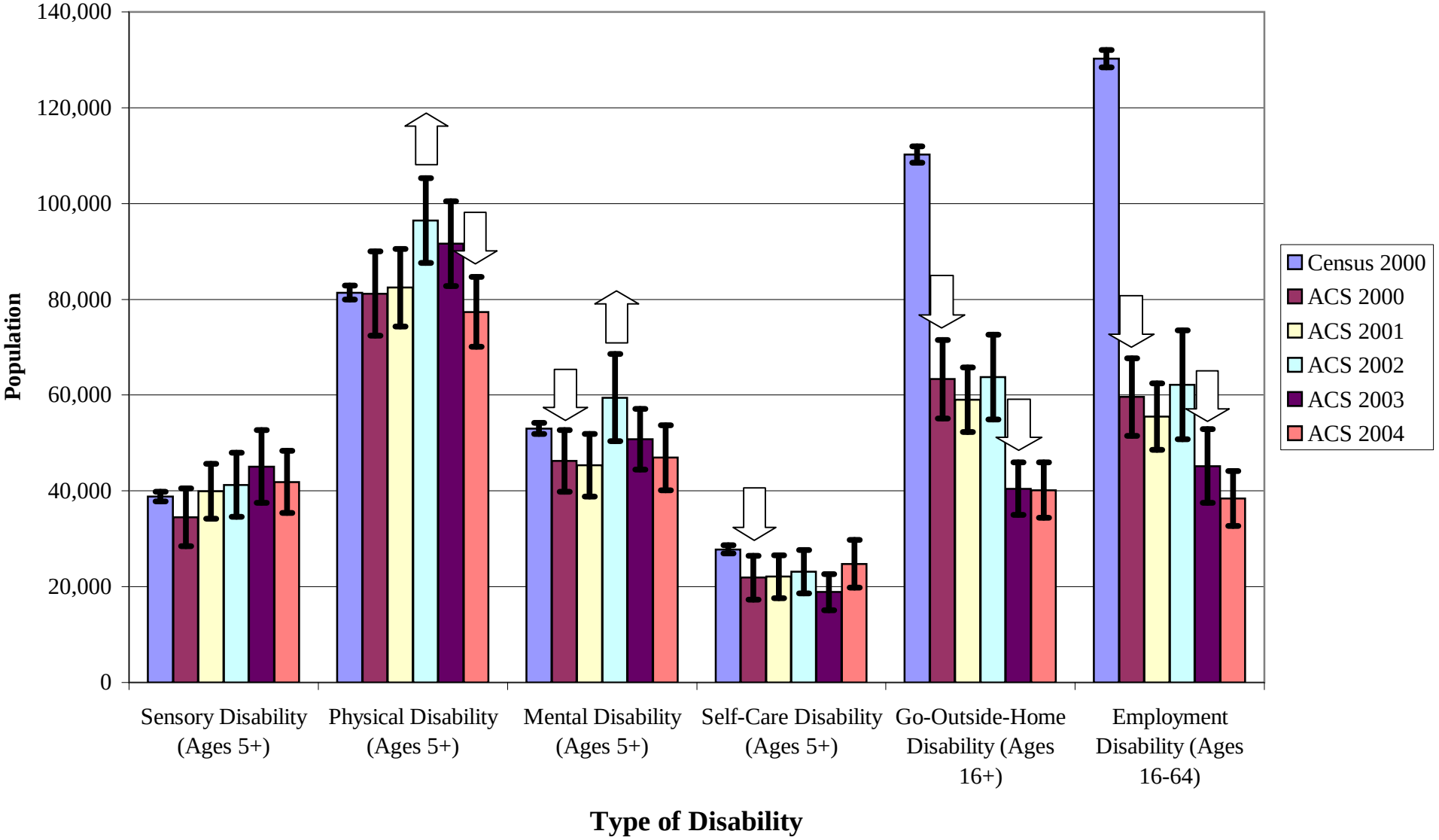
Notes:
1. Error bars indicate 90% confidence intervals.
2. White arrows indicate statistically significant differences between years.
3. Different survey instruments were used for Census 2000, ACS 2000-2002, and ACS 2003-2004.

Figure 7
Persons with Disabilities by Type of Disability, 2000-2004
San Francisco, California PMSA
Census 2000 and American Community Survey (2000-2004)



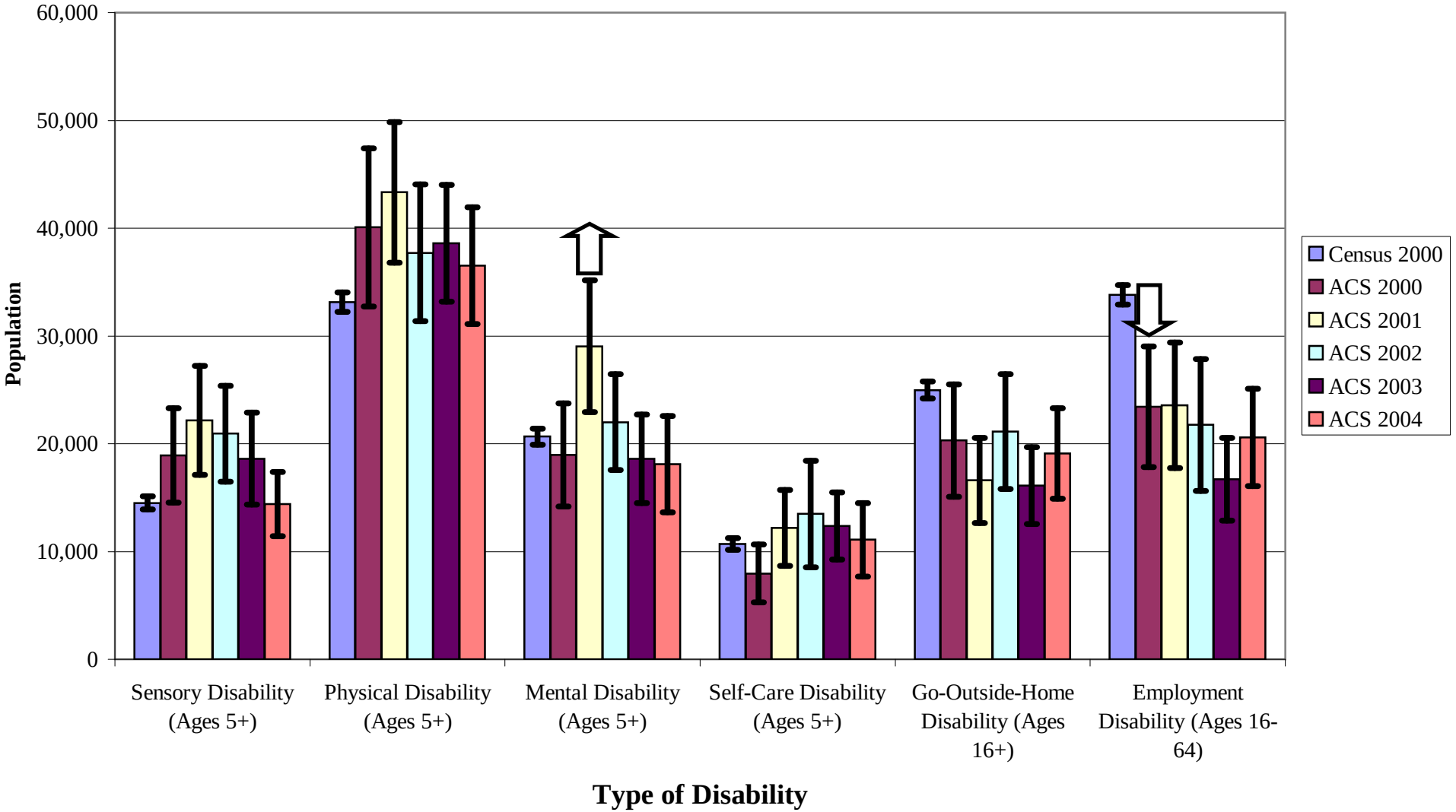
Notes:
1. Error bars indicate 90% confidence intervals.
2. White arrows indicate statistically significant differences between years.
3. Different survey instruments were used for Census 2000, ACS 2000-2002, and ACS 2003-2004.

Figure 8
Persons with Disabilities by Type, 2000-2004 of Disability
San Jose, California PMSA
Census 2000 and American Community Survey (2000-2004)



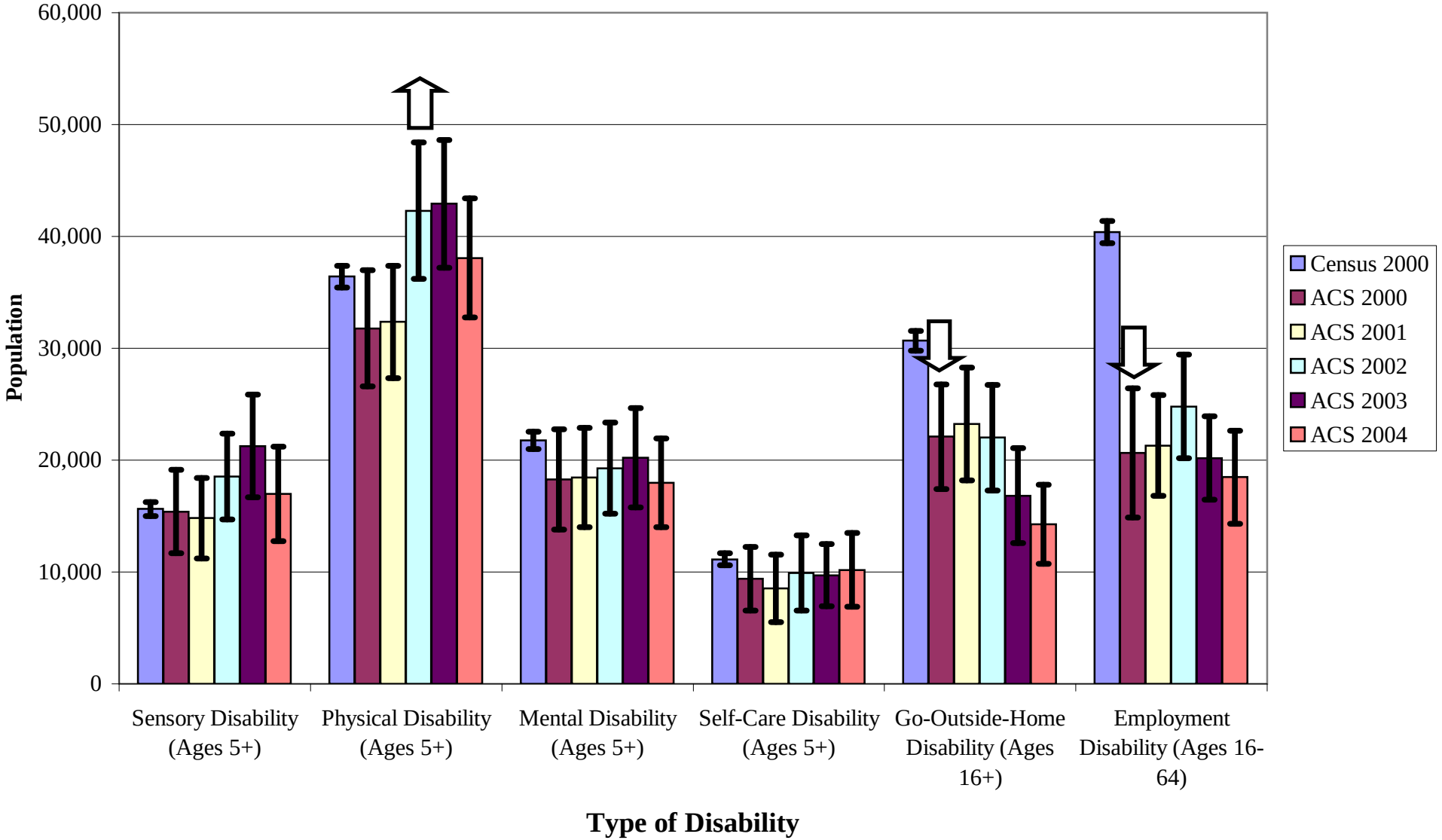
Notes:
1. Error bars indicate 90% confidence intervals.
2. White arrows indicate statistically significant differences between years.
3. Different survey instruments were used for Census 2000, ACS 2000-2002, and ACS 2003-2004.

Figure 9
Persons with Disabilities by Type of Disability, 2000-2004
Santa Rosa, California PMSA
Census 2000 and American Community Survey (2000-2004)



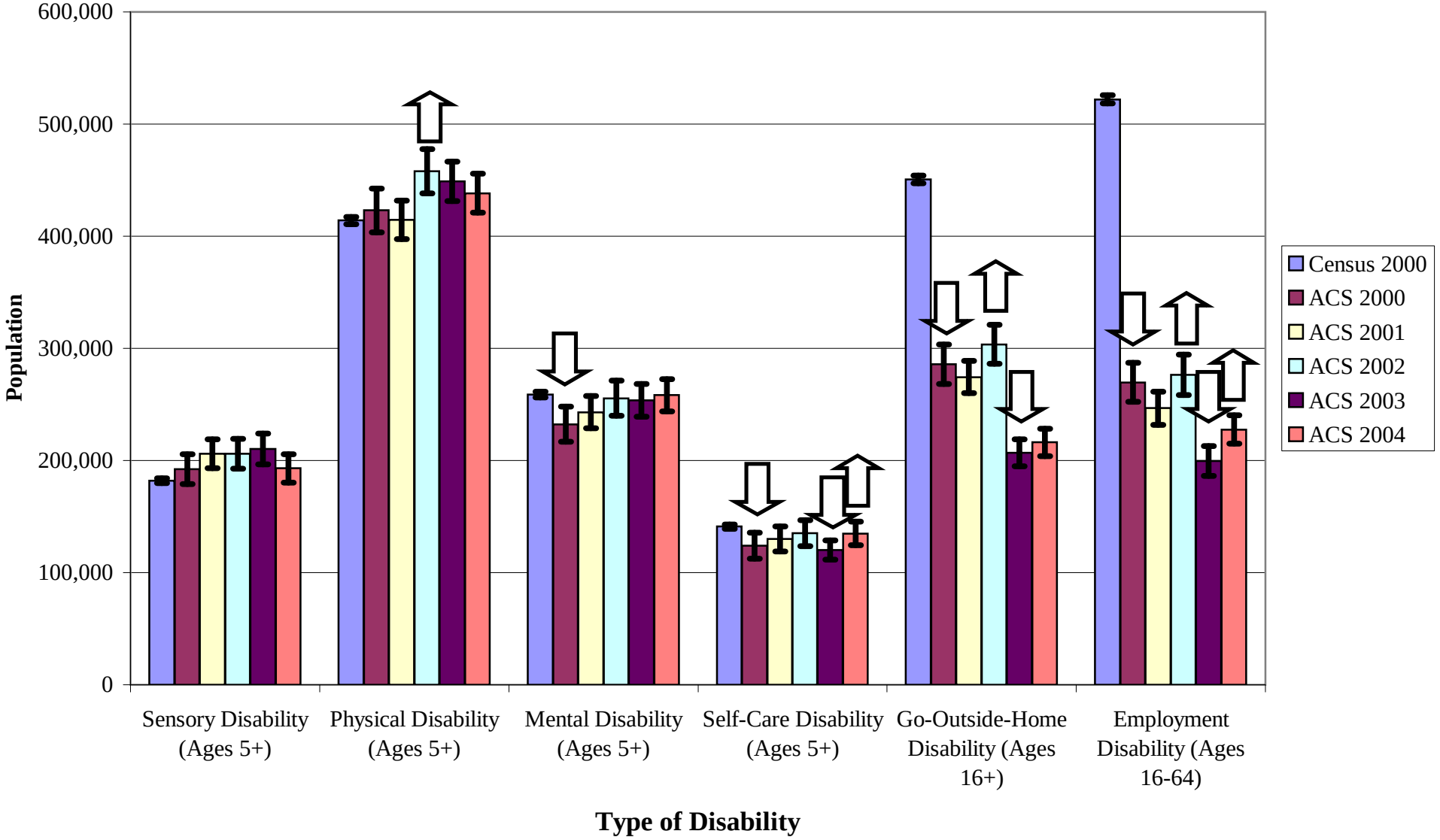
Notes:
1. Error bars indicate 90% confidence intervals.
2. White arrows indicate statistically significant differences between years.
3. Different survey instruments were used for Census 2000, ACS 2000-2002, and ACS 2003-2004.

Figure 10
Persons with Disabilities by Type of Disability, 2000-2004
Vallejo-Fairfield-Napa, California PMSA
Census 2000 and American Community Survey (2000-2004)



Notes:
1. Error bars indicate 90% confidence intervals.
2. White arrows indicate statistically significant differences between years.
3. Different survey instruments were used for Census 2000, ACS 2000-2002, and ACS 2003-2004.

Figure 11
Persons with Disabilities by Type of Disability, 2000-2004
San Francisco Bay Area
Census 2000 and American Community Survey (2000-2004)



Notes:
1. Error bars indicate 90% confidence intervals.
2. White arrows indicate statistically significant differences between years.
3. Different survey instruments were used for Census 2000, ACS 2000-2002, and ACS 2003-2004.

Table 1

Persons with Disabilities by Type of Disability

Oakland, CA PMSA

Census 2000 and American Community Survey (2000-2004)

	Census 2000		ACS 2000		ACS 2001		ACS 2002		ACS 2003		ACS 2004	
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error
Any Type of Disability (Ages 5+)	396,130	1,800	302,071	8,995	277,044	8,617	300,567	9,496	250,748	8,742	287,069	9,102
Sensory Disability (Ages 5+)	64,798	792	61,813	4,825	70,281	4,599	68,230	5,074	66,627	4,551	71,945	5,016
Physical Disability (Ages 5+)	154,627	1,212	165,491	7,705	149,153	6,579	166,999	7,508	155,631	6,309	178,657	7,329
Mental Disability (Ages 5+)	95,171	958	87,624	6,766	82,012	5,151	86,984	5,678	92,214	5,696	104,965	5,823
Self-Care Disability (Ages 5+)	52,707	715	51,197	5,356	52,460	5,005	49,612	4,195	42,471	3,007	52,619	4,091
Go-Outside-Home Disability (Ages 16+)	158,498	1,223	105,879	7,099	99,189	5,612	108,396	5,837	71,053	4,560	80,584	4,654
Employment Disability (Ages 16-64)	180,738	1,280	106,073	6,752	93,199	5,725	103,412	5,677	68,320	4,911	93,344	4,892

Table 2

Persons with Disabilities by Type of Disability

San Francisco, CA PMSA

Census 2000 and American Community Survey (2000-2004)

	Census 2000		ACS 2000		ACS 2001		ACS 2002		ACS 2003		ACS 2004	
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error
Any Type of Disability (Ages 5+)	292,329	1,543	202,747	6,580	202,546	5,662	206,358	6,344	189,921	5,732	182,887	5,193
Sensory Disability (Ages 5+)	48,097	682	61,712	3,893	58,932	3,522	57,149	3,281	58,606	3,610	47,805	2,802
Physical Disability (Ages 5+)	108,475	1,015	104,442	4,841	107,243	3,802	114,587	5,409	120,236	4,621	107,767	4,061
Mental Disability (Ages 5+)	68,305	811	61,231	3,800	68,220	3,513	67,735	3,827	71,840	4,017	70,190	3,719
Self-Care Disability (Ages 5+)	38,786	613	33,593	2,397	34,848	2,303	39,058	3,526	36,729	2,652	36,243	2,518
Go-Outside-Home Disability (Ages 16+)	126,283	1,090	74,315	4,611	76,320	3,560	88,246	5,337	62,331	3,265	62,042	3,333
Employment Disability (Ages 16-64)	136,871	1,111	59,825	4,271	53,162	3,162	64,421	4,263	49,167	2,944	56,820	3,164

Notes:

1. The upper and lower bounds of the 90-percent confidence interval are equal to the sample estimate +/- (standard error*1.65).
2. Different suvery instruments were used for Census 2000, ACS 2000-2002, and ACS 2003-2004.

Table 3

Persons with Disabilities by Type of Disability

San Jose, CA PMSA

Census 2000 and American Community Survey (2000-2004)

	Census 2000		ACS 2000		ACS 2001		ACS 2002		ACS 2003		ACS 2004	
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error
Any Type of Disability (Ages 5+)	254,729	1,455	169,139	7,227	167,838	6,371	190,239	8,703	153,760	7,040	133,977	6,207
Sensory Disability (Ages 5+)	38,848	614	34,520	3,666	39,894	3,480	41,283	4,043	45,096	4,621	41,881	3,946
Physical Disability (Ages 5+)	81,405	883	81,196	5,330	82,430	4,928	96,421	5,374	91,622	5,377	77,364	4,428
Mental Disability (Ages 5+)	53,047	716	46,251	3,887	45,383	3,978	59,476	5,498	50,771	3,828	46,943	4,110
Self-Care Disability (Ages 5+)	27,782	520	21,892	2,762	22,110	2,714	23,110	2,743	18,874	2,266	24,760	3,022
Go-Outside-Home Disability (Ages 16+)	110,232	1,019	63,314	4,986	59,023	4,103	63,773	5,374	40,471	3,303	40,178	3,493
Employment Disability (Ages 16-64)	130,246	1,085	59,602	4,888	55,521	4,221	62,151	6,872	45,185	4,675	38,430	3,462

Table 4

Persons with Disabilities by Type of Disability

Santa Rosa, CA PMSA

Census 2000 and American Community Survey (2000-2004)

	Census 2000		ACS 2000		ACS 2001		ACS 2002		ACS 2003		ACS 2004	
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error
Any Type of Disability (Ages 5+)	75,769	787	72,449	4,971	75,237	5,003	60,683	4,587	55,340	3,972	55,313	3,938
Sensory Disability (Ages 5+)	14,510	374	18,902	2,653	22,168	3,076	20,934	2,702	18,610	2,583	14,410	1,804
Physical Disability (Ages 5+)	33,137	560	40,084	4,443	43,320	3,952	37,714	3,843	38,602	3,288	36,521	3,274
Mental Disability (Ages 5+)	20,664	445	18,966	2,893	29,032	3,707	22,001	2,691	18,597	2,500	18,104	2,704
Self-Care Disability (Ages 5+)	10,690	322	7,960	1,631	12,181	2,141	13,482	2,994	12,368	1,884	11,089	2,075
Go-Outside-Home Disability (Ages 16+)	24,982	488	20,296	3,149	16,606	2,393	21,118	3,227	16,127	2,154	19,084	2,542
Employment Disability (Ages 16-64)	33,804	554	23,421	3,387	23,566	3,519	21,747	3,703	16,701	2,324	20,576	2,743

Notes:

1. The upper and lower bounds of the 90-percent confidence interval are equal to the sample estimate +/- (standard error*1.65).
2. Different suvery instruments were used for Census 2000, ACS 2000-2002, and ACS 2003-2004.

Table 5

Persons with Disabilities by Type of Disability

Vallejo-Fairfield-Napa, CA PMSA

Census 2000 and American Community Survey (2000-2004)

	Census 2000		ACS 2000		ACS 2001		ACS 2002		ACS 2003		ACS 2004	
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error
Any Type of Disability (Ages 5+)	87,876	846	63,973	4,449	65,041	4,404	73,271	4,508	65,556	3,889	57,315	4,189
Sensory Disability (Ages 5+)	15,627	389	15,404	2,264	14,807	2,171	18,534	2,315	21,270	2,791	16,984	2,570
Physical Disability (Ages 5+)	36,416	587	31,777	3,147	32,363	3,042	42,300	3,695	42,923	3,461	38,070	3,227
Mental Disability (Ages 5+)	21,768	458	18,267	2,713	18,457	2,687	19,285	2,470	20,217	2,689	17,974	2,396
Self-Care Disability (Ages 5+)	11,135	329	9,400	1,721	8,536	1,830	9,911	2,031	9,717	1,679	10,176	1,999
Go-Outside-Home Disability (Ages 16+)	30,674	539	22,103	2,836	23,239	3,052	22,006	2,857	16,829	2,577	14,253	2,142
Employment Disability (Ages 16-64)	40,376	604	20,646	3,499	21,310	2,727	24,791	2,805	20,186	2,261	18,487	2,520

Table 6

Persons with Disabilities by Type of Disability

San Francisco Bay Area

Census 2000 and American Community Survey (2000-2004)

	Census 2000		ACS 2000		ACS 2001		ACS 2002		ACS 2003		ACS 2004	
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error
Any Type of Disability (Ages 5+)	1,106,833	3,012	810,379	14,864	787,706	13,832	831,118	15,733	715,325	13,774	716,561	13,469
Sensory Disability (Ages 5+)	181,880	1,326	192,351	8,003	206,082	7,736	206,130	8,094	210,209	8,340	193,025	7,644
Physical Disability (Ages 5+)	414,060	1,984	422,990	11,868	414,509	10,339	458,021	11,956	449,014	10,623	438,379	10,533
Mental Disability (Ages 5+)	258,955	1,580	232,339	9,543	243,104	8,698	255,481	9,511	253,639	8,759	258,176	8,813
Self-Care Disability (Ages 5+)	141,100	1,170	124,042	6,905	130,135	6,756	135,173	7,116	120,159	5,252	134,887	6,365
Go-Outside-Home Disability (Ages 16+)	450,669	2,062	285,907	10,699	274,377	8,720	303,539	10,488	206,811	7,324	216,141	7,485
Employment Disability (Ages 16-64)	522,035	2,173	269,567	10,556	246,758	8,967	276,522	10,918	199,559	8,072	227,657	7,733

Notes:

1. The upper and lower bounds of the 90-percent confidence interval are equal to the sample estimate +/- (standard error*1.65).
2. Different suvery instruments were used for Census 2000, ACS 2000-2002, and ACS 2003-2004.

Table 7

Share of Persons with Disabilities by Type of Disability

Oakland, CA PMSA

Census 2000 and American Community Survey (2000-2004)

	Census 2000		ACS 2000		ACS 2001		ACS 2002		ACS 2003		ACS 2004	
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error
Any Type of Disability (Ages 5+)	17.9%	0.08%	13.8%	0.41%	12.5%	0.39%	13.3%	0.42%	11.1%	0.39%	12.7%	0.40%
Sensory Disability (Ages 5+)	2.9%	0.04%	2.8%	0.22%	3.2%	0.21%	3.0%	0.23%	3.0%	0.20%	3.2%	0.22%
Physical Disability (Ages 5+)	7.0%	0.05%	7.6%	0.35%	6.7%	0.30%	7.4%	0.33%	6.9%	0.28%	7.9%	0.33%
Mental Disability (Ages 5+)	4.3%	0.04%	4.0%	0.31%	3.7%	0.23%	3.9%	0.25%	4.1%	0.25%	4.7%	0.26%
Self-Care Disability (Ages 5+)	2.4%	0.03%	2.3%	0.24%	2.4%	0.23%	2.2%	0.19%	1.9%	0.13%	2.3%	0.18%
Go-Outside-Home Disability (Ages 16+)	8.7%	0.07%	5.8%	0.39%	5.4%	0.31%	5.8%	0.31%	3.8%	0.24%	4.3%	0.25%
Employment Disability (Ages 16-64)	11.4%	0.08%	6.8%	0.43%	5.9%	0.36%	6.4%	0.35%	4.2%	0.30%	5.8%	0.30%

Table 8

Share of Persons with Disabilities by Type of Disability

San Francisco, CA PMSA

Census 2000 and American Community Survey (2000-2004)

	Census 2000		ACS 2000		ACS 2001		ACS 2002		ACS 2003		ACS 2004	
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error
Any Type of Disability (Ages 5+)	18.0%	0.09%	12.7%	0.41%	12.8%	0.36%	13.1%	0.40%	12.2%	0.37%	11.8%	0.34%
Sensory Disability (Ages 5+)	3.0%	0.04%	3.9%	0.24%	3.7%	0.22%	3.6%	0.21%	3.8%	0.23%	3.1%	0.18%
Physical Disability (Ages 5+)	6.7%	0.06%	6.5%	0.30%	6.8%	0.24%	7.3%	0.34%	7.7%	0.30%	7.0%	0.26%
Mental Disability (Ages 5+)	4.2%	0.05%	3.8%	0.24%	4.3%	0.22%	4.3%	0.24%	4.6%	0.26%	4.5%	0.24%
Self-Care Disability (Ages 5+)	2.4%	0.04%	2.1%	0.15%	2.2%	0.15%	2.5%	0.22%	2.4%	0.17%	2.3%	0.16%
Go-Outside-Home Disability (Ages 16+)	8.9%	0.07%	5.3%	0.33%	5.5%	0.26%	6.4%	0.38%	4.5%	0.24%	4.6%	0.25%
Employment Disability (Ages 16-64)	11.4%	0.09%	5.0%	0.36%	4.6%	0.27%	5.5%	0.37%	4.3%	0.26%	5.0%	0.28%

Table 9

Share of Persons with Disabilities by Type of Disability

San Jose, CA PMSA

Census 2000 and American Community Survey (2000-2004)

	Census 2000		ACS 2000		ACS 2001		ACS 2002		ACS 2003		ACS 2004	
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error
Any Type of Disability (Ages 5+)	16.4%	0.09%	11.0%	0.47%	11.1%	0.42%	12.5%	0.57%	10.1%	0.46%	8.8%	0.41%
Sensory Disability (Ages 5+)	2.5%	0.04%	2.3%	0.24%	2.6%	0.23%	2.7%	0.27%	3.0%	0.30%	2.7%	0.26%
Physical Disability (Ages 5+)	5.2%	0.06%	5.3%	0.35%	5.5%	0.33%	6.3%	0.35%	6.0%	0.35%	5.1%	0.29%
Mental Disability (Ages 5+)	3.4%	0.05%	3.0%	0.25%	3.0%	0.26%	3.9%	0.36%	3.3%	0.25%	3.1%	0.27%
Self-Care Disability (Ages 5+)	1.8%	0.03%	1.4%	0.18%	1.5%	0.18%	1.5%	0.18%	1.2%	0.15%	1.6%	0.20%
Go-Outside-Home Disability (Ages 16+)	8.5%	0.08%	5.0%	0.39%	4.7%	0.33%	5.0%	0.42%	3.2%	0.26%	3.1%	0.27%
Employment Disability (Ages 16-64)	11.4%	0.09%	5.3%	0.43%	5.1%	0.38%	5.6%	0.62%	4.0%	0.42%	3.5%	0.31%

Table 10

Share of Persons with Disabilities by Type of Disability

Santa Rosa, CA PMSA

Census 2000 and American Community Survey (2000-2004)

	Census 2000		ACS 2000		ACS 2001		ACS 2002		ACS 2003		ACS 2004	
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error
Any Type of Disability (Ages 5+)	17.7%	0.18%	17.2%	1.18%	17.7%	1.18%	14.2%	1.07%	13.0%	0.93%	12.9%	0.92%
Sensory Disability (Ages 5+)	3.4%	0.09%	4.5%	0.63%	5.2%	0.72%	4.9%	0.63%	4.4%	0.61%	3.4%	0.42%
Physical Disability (Ages 5+)	7.8%	0.13%	9.5%	1.05%	10.2%	0.93%	8.8%	0.90%	9.1%	0.77%	8.5%	0.76%
Mental Disability (Ages 5+)	4.8%	0.10%	4.5%	0.69%	6.8%	0.87%	5.1%	0.63%	4.4%	0.59%	4.2%	0.63%
Self-Care Disability (Ages 5+)	2.5%	0.07%	1.9%	0.39%	2.9%	0.50%	3.1%	0.70%	2.9%	0.44%	2.6%	0.48%
Go-Outside-Home Disability (Ages 16+)	7.0%	0.13%	5.8%	0.91%	4.8%	0.69%	5.9%	0.90%	4.5%	0.60%	5.3%	0.71%
Employment Disability (Ages 16-64)	11.3%	0.18%	8.0%	1.15%	8.1%	1.20%	7.2%	1.22%	5.5%	0.77%	6.8%	0.91%

Table 11

Share of Persons with Disabilities by Type of Disability

Vallejo-Fairfield-Napa, CA PMSA

Census 2000 and American Community Survey (2000-2004)

	Census 2000		ACS 2000		ACS 2001		ACS 2002		ACS 2003		ACS 2004	
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error
Any Type of Disability (Ages 5+)	19.1%	0.18%	14.2%	0.98%	13.8%	0.92%	15.4%	0.92%	13.4%	0.76%	11.9%	0.86%
Sensory Disability (Ages 5+)	3.4%	0.08%	3.4%	0.50%	3.2%	0.46%	3.9%	0.48%	4.3%	0.56%	3.5%	0.53%
Physical Disability (Ages 5+)	7.9%	0.12%	7.0%	0.70%	6.9%	0.64%	8.9%	0.77%	8.8%	0.69%	7.9%	0.66%
Mental Disability (Ages 5+)	4.7%	0.10%	4.1%	0.60%	3.9%	0.57%	4.1%	0.52%	4.1%	0.54%	3.7%	0.49%
Self-Care Disability (Ages 5+)	2.4%	0.07%	2.1%	0.38%	1.8%	0.39%	2.1%	0.43%	2.0%	0.34%	2.1%	0.41%
Go-Outside-Home Disability (Ages 16+)	8.3%	0.14%	6.1%	0.78%	6.3%	0.81%	5.7%	0.73%	4.3%	0.65%	3.7%	0.55%
Employment Disability (Ages 16-64)	12.7%	0.18%	6.6%	1.11%	6.7%	0.85%	7.5%	0.84%	6.0%	0.66%	5.6%	0.76%

Table 12

Share of Persons with Disabilities by Type of Disability

San Francisco Bay Area

Census 2000 and American Community Survey (2000-2004)

	Census 2000		ACS 2000		ACS 2001		ACS 2002		ACS 2003		ACS 2004	
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error
Any Type of Disability (Ages 5+)	17.6%	0.05%	13.1%	0.24%	12.7%	0.22%	13.3%	0.25%	11.4%	0.22%	11.5%	0.22%
Sensory Disability (Ages 5+)	2.9%	0.02%	3.1%	0.13%	3.3%	0.12%	3.3%	0.13%	3.4%	0.13%	3.1%	0.12%
Physical Disability (Ages 5+)	6.6%	0.03%	6.8%	0.19%	6.7%	0.17%	7.3%	0.19%	7.2%	0.17%	7.0%	0.17%
Mental Disability (Ages 5+)	4.1%	0.02%	3.8%	0.15%	3.9%	0.14%	4.1%	0.15%	4.1%	0.14%	4.1%	0.14%
Self-Care Disability (Ages 5+)	2.2%	0.02%	2.0%	0.11%	2.1%	0.11%	2.2%	0.11%	1.9%	0.08%	2.2%	0.10%
Go-Outside-Home Disability (Ages 16+)	8.5%	0.04%	5.5%	0.21%	5.3%	0.17%	5.8%	0.20%	3.9%	0.14%	4.1%	0.14%
Employment Disability (Ages 16-64)	11.5%	0.05%	6.0%	0.23%	5.6%	0.20%	6.1%	0.24%	4.4%	0.18%	5.1%	0.17%

Table 13
Percent Allocation (Imputation) by Disability Type - Census 2000

	PMSA					
Disability Type	Oakland	San Francisco	San Jose	Santa Rosa	Vallejo-Fairfield-Napa	San Francisco Bay Area
Sensory	7.2%	7.8%	7.4%	6.5%	6.6%	7.3%
Physical	7.9%	8.6%	8.0%	7.4%	7.3%	8.0%
Mental	7.7%	8.4%	7.9%	7.0%	7.0%	7.8%
Self-Care	8.1%	8.8%	8.3%	7.3%	7.4%	8.2%
Go-Outside-Home (Ages 16+)	10.0%	10.9%	9.9%	9.2%	9.3%	10.1%
Employment (Ages 16-64)	10.2%	10.9%	10.3%	9.1%	9.3%	10.3%
Total Allocation	8.4%	9.1%	8.5%	7.6%	7.7%	8.5%

Source: Census 2000 Summary File 3 Tables P120-P125

Table 14
Percent Allocation (Imputation) by Disability Type - 2000 American Community Survey

	PMSA					
Disability Type	Oakland	San Francisco	San Jose	Santa Rosa	Vallejo-Fairfield-Napa	San Francisco Bay Area
Sensory	5.8%	6.8%	6.9%	5.1%	9.8%	6.6%
Physical	6.0%	7.3%	7.2%	4.8%	10.0%	6.8%
Mental	5.5%	6.9%	6.9%	4.5%	9.6%	6.4%
Self-Care	5.6%	7.1%	7.1%	4.7%	9.8%	6.6%
Go-Outside-Home (Ages 16+)	6.5%	7.8%	7.7%	6.2%	10.7%	7.4%
Employment (Ages 16-64)	5.7%	6.8%	7.0%	5.1%	10.2%	6.6%
Total Allocation	5.8%	7.1%	7.1%	5.0%	10.0%	6.7%

Source: Census 2000 Supplementary Survey Summary Tables P145-P150

Table 15
Percent Allocation (Imputation) by Disability Type - 2001 American Community Survey

	PMSA					
Disability Type	Oakland	San Francisco	San Jose	Santa Rosa	Vallejo-Fairfield-Napa	San Francisco Bay Area
Sensory	2.6%	4.5%	3.4%	6.4%	4.4%	3.7%
Physical	2.8%	4.7%	3.6%	6.0%	4.9%	3.9%
Mental	2.1%	4.2%	3.0%	5.2%	4.0%	3.2%
Self-Care	2.2%	4.2%	3.2%	5.3%	4.1%	3.3%
Go-Outside-Home (Ages 16+)	2.8%	4.4%	3.1%	5.7%	3.9%	3.6%
Employment (Ages 16-64)	2.3%	3.8%	2.6%	5.5%	3.1%	3.0%
Total Allocation	2.5%	4.3%	3.2%	5.7%	4.1%	3.5%

Source: 2001 Supplementary Survey Summary Tables P145-P150

Table 16
Percent Allocation (Imputation) by Disability Type - 2002 American Community Survey

	PMSA					
Disability Type	Oakland	San Francisco	San Jose	Santa Rosa	Vallejo-Fairfield-Napa	San Francisco Bay Area
Sensory	2.6%	4.2%	4.3%	3.4%	7.1%	3.8%
Physical	2.9%	4.4%	4.3%	4.0%	7.4%	4.0%
Mental	2.1%	3.9%	4.1%	3.1%	6.5%	3.4%
Self-Care	2.1%	3.8%	4.1%	3.1%	6.5%	3.4%
Go-Outside-Home (Ages 16+)	2.5%	4.2%	4.5%	3.4%	6.0%	3.8%
Employment (Ages 16-64)	2.1%	3.8%	4.3%	3.2%	5.3%	3.4%
Total Allocation	2.4%	4.1%	4.3%	3.4%	6.5%	3.6%

Source: 2002 American Community Survey Summary Tables P145-P150

Table 17
Percent Allocation (Imputation) by Disability Type - 2003 Ameican Community Survey

	PMSA					
Disability Type	Oakland	San Francisco	San Jose	Santa Rosa	Vallejo-Fairfield-Napa	San Francisco Bay Area
Sensory	2.1%	3.9%	3.1%	4.1%	7.4%	3.3%
Physical	2.7%	4.6%	3.7%	5.0%	8.7%	4.0%
Mental	1.9%	3.6%	2.8%	3.8%	7.4%	3.1%
Self-Care	2.0%	3.9%	3.0%	3.8%	7.5%	3.3%
Go-Outside-Home (Ages 16+)	2.1%	4.1%	3.2%	4.4%	7.4%	3.4%
Employment (Ages 16-64)	2.1%	3.7%	3.1%	4.7%	8.4%	3.4%
Total Allocation	2.1%	4.0%	3.1%	4.3%	7.8%	3.4%

Source: 2003 American Community Survey Summary Tables P145-P150

Table 18
Percent Allocation (Imputation) by Disability Type - 2004 American Community Survey

	PMSA					
Disability Type	Oakland	San Francisco	San Jose	Santa Rosa	Vallejo-Fairfield-Napa	San Francisco Bay Area
Sensory	2.4%	3.7%	1.8%	4.4%	7.1%	3.1%
Physical	3.3%	4.8%	2.4%	5.2%	7.7%	3.9%
Mental	2.2%	3.5%	1.6%	3.5%	6.6%	2.8%
Self-Care	2.2%	3.7%	1.5%	4.1%	6.3%	2.9%
Go-Outside-Home (Ages 16+)	2.1%	3.4%	1.6%	3.4%	7.0%	2.8%
Employment (Ages 16-64)	2.2%	3.5%	1.7%	3.3%	6.0%	2.8%
Total Allocation	2.4%	3.8%	1.8%	4.0%	6.8%	3.1%

Source: 2004 American Community Survey Summary Tables B99182-B99187